RTCA Special Committee 186, Working Group 5

ADS-B UAT MOPS

Meeting 8

Concept for Test Procedure Interfaces

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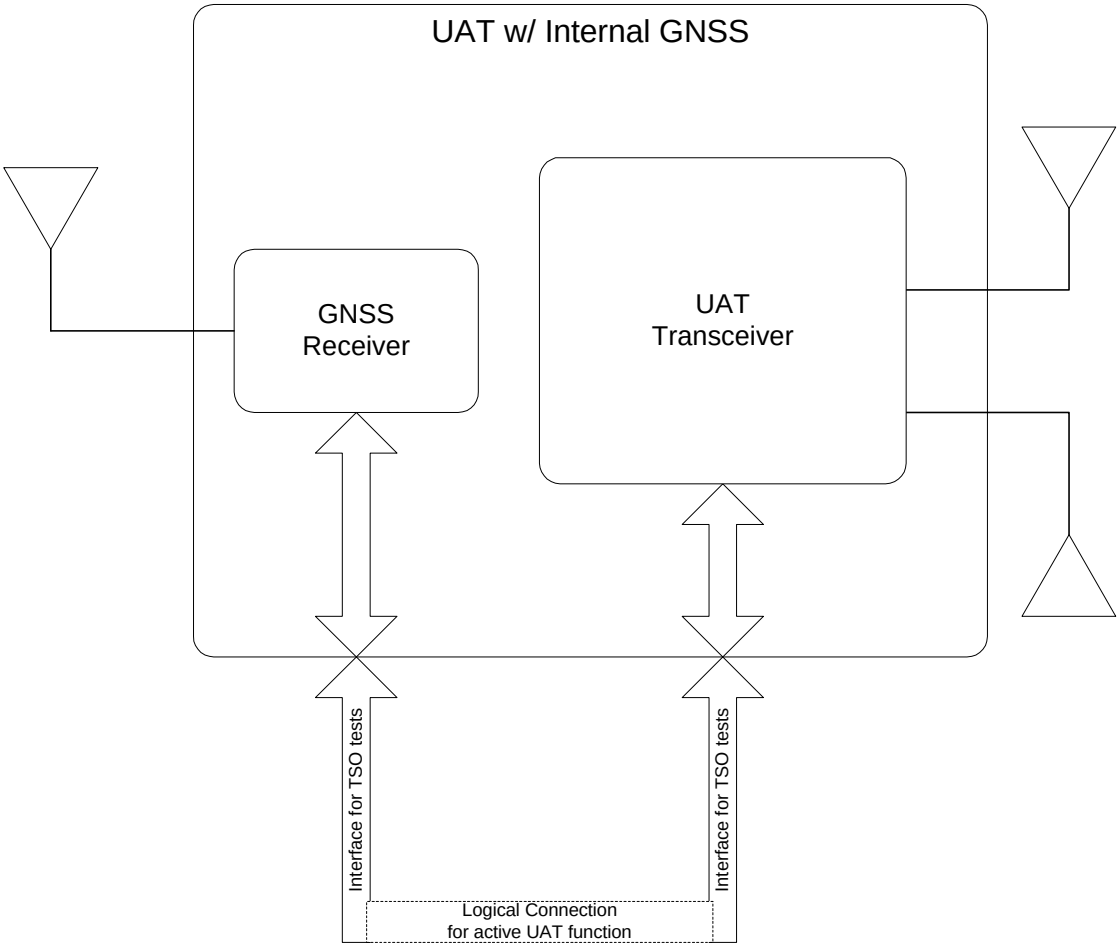
SUMMARY
This paper presents a concept for how to uncouple the GNSS and UAT functions for purposes of test procedure development.

Introduction:

The UAT with integrated GNSS receiver presents some challenging issues with regard to test procedure development. This paper presents one possible solution. Note that many other necessary interfaces are not shown, as they are not germane to this particular topic.



Description of the above Figure:
The figure presents a block diagram of a UAT with integral GNSS receiver. The GNSS receiver will need to be tested to comply with the appropriate TSO requirements. The UAT will also have a set of TSO requirements. The idea presented here is to define separate interfaces to each major function (GNSS and UAT Datalink). This allows total partitioning of the test procedures from each other. Separating the GNSS from the UAT Datalink allows the UAT MOPS committee to concentrate on creating test procedures that are specific to the datalink functions themselves. The appropriate GNSS test procedures to comply with its TSOs can be developed as for any GNSS equipment.

The two portions of the integrated UAT can be tested separately.

For use as a functional UAT, the user must only provide a connection between the two halves (shown as the dottted bar). This connection could be either a logical or physical one. Use of a logical connection would require additional certification effort to demonstrate that the logical connection does not provide a source of unintended errors. Use of a physical connection would perhaps be the easiest to certify, but may create other undesirable characteristics. The choice should be left up to the manufacturer and the certification authorities.

The end result would be that an integrated UAT would likely carry two separate TSOs, one for the GNSS function, and another for the UAT function.